

1 CLAIMS

2 1. A method of reclaiming resources used by computer application
3 programs executing on a computer, the method comprising:

4 identifying computer application programs executing on the computer;

5 assigning a priority value to each of the identified computer application
6 programs, wherein the priority value is determined based on a plurality of
7 characteristics of the identified computer application programs; and

8 automatically terminating the computer application program with the
9 smallest priority value.

10
11 2. A method as recited in claim 1, further comprising:

12 if the computer application program with the smallest priority value is in a
13 modal state in which it waits for a response from a user, then providing a default
14 response to the computer application prior to terminating the computer application
15 program.

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17 3. A method as recited in claim 1, further comprising:

18 identifying computer application programs executing on the computer that
19 are core applications, wherein core applications are not terminated, regardless of
20 priority value.

21
22 4. A method as recited in claim 1, further comprising:

23 if the computer application program with the smallest priority is in a modal
24 state in which it waits for a response from a user, then providing a default response
25 to the computer application prior to terminating the computer application program,

1 wherein the default response is provided to the computer application program in
2 lieu of a response from a user, and wherein the default response takes the
3 application program out of its modal state.

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5 5. A method as recited in claim 1, wherein each characteristic of the
6 identified computer application programs has an associated weighting factor
7 indicating the importance of the characteristic.

8
9 6. A method as recited in claim 1, wherein the characteristics of the
10 identified computer application programs include average launch times for the
11 computer application program.

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13 7. A method as recited in claim 1, wherein the parameters
14 characteristics of the identified computer application programs include average
15 memory usages of the computer application programs.

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17 8. A method as recited in claim 1, wherein the parameters
18 characteristics of the identified computer application programs include classes
19 associated with the computer application programs.

1 9. A method as recited in claim 1, wherein the parameters
2 characteristics of the identified computer application programs include frequencies
3 of usage of the computer application programs.

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5 10. A method as recited in claim 1, wherein the parameters
6 characteristics of the identified computer application programs include the
7 amounts of data stored on the computer by the computer application programs.

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9 11. A method as recited in claim 1, further comprising:
10 assigning values to the characteristics of the identified computer application
11 programs;

12 wherein the priority value for a particular computer application program is
13 determined by adding together the characteristic values of the particular computer
14 application program.

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16 12. A method as recited in claim 1, wherein the computer is a palmtop
17 computing device.

18
19 13. One or more computer-readable memories containing a computer
20 program that is executable by a processor to perform the method recited in claim
21 1.

1 14. A method of terminating a computer application program executing
2 on a computer, the method comprising:

3 determining whether the computer application program being terminated is
4 in a modal state in which it waits for a response from a user;

5 if the computer application being terminated is in a modal state, then
6 providing a default response to the computer application program in lieu of a
7 response from a user, wherein the default response takes the computer application
8 program out of its modal state; and

9 terminating the computer application program.

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11 15. A method as recited in claim 14, wherein the step of providing the
12 default response to the computer application program is repeated until the
13 computer application program being terminated is in a non-modal state, prior to
14 performing the terminating step.

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16 16. A method as recited in claim 14, wherein an operating system
17 executing on the computer instructs the computer application to generate its own
18 default response.

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20 17. A method as recited in claim 14, wherein an operating system
21 executing on the computer provides the default response to the computer
22 application.

1 18. A method as recited in claim 14, wherein an operating system
2 executing on the computer provides the default response to the computer
3 application, and wherein the operating system receives the default response from
4 the computer application when the computer application is launched.

5
6 19. One or more computer-readable media having stored thereon a
7 computer program comprising the following steps:

8 identifying application programs executing on a computer;

9 assigning a priority value to each of the identified application programs,
10 wherein the priority value is determined based on a plurality of characteristics of
11 the identified application programs; and

12 automatically terminating the application program with the smallest priority
13 value.

14
15 20. One or more computer-readable media as recited in claim 19,
16 further:

17 if the application program with the smallest priority value is in a modal
18 state in which it waits for a response from a user, then providing a default response
19 to the application program prior to terminating the application program.

20
21 21. One or more computer-readable media as recited in claim 19,
22 further:

23 identifying application programs executing on the computer that are core
24 applications, wherein core applications are not terminated, regardless of priority
25 value.

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2 **22.** One or more computer-readable media as recited in claim 19,
3 further:

4 if the application program with the smallest priority value is in a modal
5 state in which it waits for a response from a user, then providing a default response
6 to the application program prior to terminating the application program, wherein
7 the default response is provided to the application program in lieu of a response
8 from a user, and wherein the default response takes the application program out of
9 its modal state.

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11 **23.** One or more computer-readable media as recited in claim 19,
12 wherein each characteristic of the identified computer application programs has an
13 associated weighting factor indicating the importance of the characteristic.

14
15 **24.** One or more computer-readable media as recited in claim 19,
16 further:

17 assigning values to the characteristics of the identified application program;
18 wherein the priority value for a particular application program is
19 determined by adding together the characteristic values of the particular
20 application program.

1 25. One or more computer-readable media as recited in claim 19,
2 wherein the characteristics of the identified computer application programs
3 include one or more of the following characteristics:

4 average launch times for the application programs;
5 average memory usages of the application programs;
6 classes associated with the application programs;
7 frequencies of usage of the application programs; and
8 amounts of data stored by the application programs.

9
10 26. An apparatus comprising:

11 one or more processors;

12 at least two application programs that are executed concurrently by the one
13 or more processors; and

14 an operating system that is executed by the processor;

15 wherein the operating system is configured to assign a priority value to
16 each application program being executed by the processor, and further configured
17 to automatically terminate the computer application program with the smallest
18 priority value.

19
20 27. An apparatus as recited in claim 26 wherein the operating system is
21 configured to identify application programs that are core applications, and wherein
22 core applications are not terminated, regardless of priority value.
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1 28. An apparatus as recited in claim 26 wherein:

2 the application program provides a default response to the operating system
3 when entering a modal state in which it will wait for user input; and

4 the operating system is further configured to provide the default response to
5 a particular application program in lieu of user input prior to terminating the
6 particular application program.

7
8 29. An apparatus as recited in claim 26 wherein the application
9 termination module is further configured to provide a default response prior to
10 terminating an application program in a modal state.

11
12 30. An apparatus as recited in claim 26 wherein the application
13 termination module is further configured to determine the priority value assigned
14 to each application program by evaluating a plurality of parameters associated
15 with each application program.

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17 31. An apparatus as recited in claim 26 wherein the application
18 termination module is further configured to calculate the priority value associated
19 with a particular application program by adding together the values of all
20 parameters associated with the particular application program.